

REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

Independent claims 1 and 14-16 have been amended to clarify features of the invention recited therein and to further distinguish the present invention from the references relied upon in the rejections discussed below. In addition, claim 4 has been amended to correct a typographical error.

Claims 1-3, 10-12 and 14-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kimura (U.S. 5,862,586) and Maenishi (U.S. 6,289,582). This rejection is believed clearly inapplicable to claims 1-12 and 14-16 for the following reasons.

Amended independent claim 1 recites an optimization method for optimizing an order of component mounting in a component mounting system having (1) a plurality of mounters for mounting components onto a board, wherein each of the mounters includes (2) a respective component supply unit and a respective placement head for mounting picked-up components onto the board. In addition, claim 1 recites that, (3) the board includes a plurality of component patterns according to which components are mounted thereon, wherein each of the component patterns have the same component placement structure. Further, claim 1 recites that the optimization method includes (4) respectively allocating components to each of the mounters on one of a per component placement pattern basis and a per group of component placement patterns basis, such that, (5) the placement head of each of the mounters mounts every component of one of a respective component placement pattern and a respective group of

component placement patterns, representing partial regions of the board, and (6) such that all of the respective placement heads of the plurality of mounters mount the components onto the partial regions of the board resulting in the components being mounted onto every region of the board.

Initially, please note that the above-described 35 U.S.C. § 103(a) rejection acknowledges that Kimura fails to disclose or suggest the optimization method, as recited, and further limited in amended independent claim 1. In light of the above this rejection relies on Maenishi for teaching the above-mentioned features which are admittedly lacking from Kimura.

However, Maenishi merely teaches that a component feeder 4 includes a plurality of component accommodating units 4a for storing components, each component accommodating unit 4a, being identified as, for example, Z1 through Z7 (see Figs 2 and 3A and col. 10, lines 47-56). Specifically, Maenishi teaches that the components are feed from the component feeder 4, to the component feed section 5 and eventually to the suction nozzles 2 of the mounter 30, in the order that the components arranged in component accommodating units Z1-Z7 (see Figs. 2 and 3A, col. 1, lines 15-25, and col. 10, lines 50-60). In other words, Maenishi merely teaches a method of using a single mounter 30 to sequentially receive and mount components in an order by which the components are stored in the component feeder 4 (e.g., the order of the components as stored in units Z1-Z7 in sequential order).

Thus, in view of the above, it is clear that Maenishi merely teaches a method of receiving and mounting components using a single mounter, but fails to disclose or suggest a plurality of mounters for mounting components onto a board, wherein each of the mounters includes a respective component supply unit and a respective placement head for mounting picked-up

components onto the board, as required by claim 1.

In addition, it is apparent that Maenishi teaches that the mounter merely receives and mounts components in the sequential order by which the components are stored in the component feeder, but fails to disclose or suggest a plurality of mounters, each mounter for mounting components onto a board that includes a plurality of component patterns according to which components are mounted thereon, wherein each of the component patterns have the same component placement structure, as required by claim 1.

Moreover, it is evident that Maenishi teaches a method of using a single mounter to sequentially receive and mount components in an order by which the components are stored in units Z1-Z7 in sequential order, but fails to disclose or suggest, allocating components to each of the mounters on one of a per component placement pattern basis and a per group of component placement patterns basis, such that the placement head of each of the mounters mounts every component of one of a respective component placement pattern and a respective group of component placement patterns, representing partial regions of the board, and such that all of the respective placement heads of the plurality of mounters mount the components onto the partial regions of the board resulting in the components being mounted onto every region of the board, as required by claim 1.

Please note that one of the benefits of the configuration recited in claim 1 is that, since each of the mounters mounts every component of a respective component placement pattern (each of the component placement patterns having the same component placement structure), the components can be allocated (via the optimization) so that a mounting time required for each of the mounters uniform. In light of the discussion above, the Maenishi references does not provide

the above-mentioned benefits of the features recited by claim 1 because Maenishi requires the placement heads of a single mounter to mount all of the components in sequential order from the component feeder 4 on to multiple board sections.

Therefore, because of the above-mentioned distinctions it is believed clear that claim 1 and claims 2-12 that depend therefrom would not have been obvious or result from any combination of Kimura and Maenishi.

Amended independent claims 14-16 recite a program, a mounting apparatus, and an optimization apparatus, respectively. Amended claims 14-16 recite features that correspond to the above-mentioned distinguishing features of independent claim 1. Thus, for the same reasons discussed above, it is respectfully submitted that claims 14-16 are allowable over the combination of Kimura and Maenishi.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance and an early notification thereof is earnestly requested. The Examiner is invited to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

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